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Dietary patterns and associated health-related lifestyle factors in Denmark

Vibeke K. Knudsen, Anja Biloft-Jensen, Jeppe Matthiessen, Mette R. Sørensen, Margit V. Groth, Ellen Trolle, Tue Christensen, Sisse Fagt

Division of Nutrition, National Food Institute, Tecnical University of Denmark (DTU Food)

Background and Objectives

Poor diet has been associated with increased risk of lifestyle-related diseases. Despite having had food-based dietary guidelines in Denmark since 1970’ties, the compliance is still low. Identification of major dietary patterns in the population may facilitate Health authorities in more targeted nutrition education towards potentially vulnerable groups in the population. The objective was to identify dietary patterns in the Danish population, and to describe associations with lifestyle factors.

Methods

Data derive from the Danish National Survey of Diet and Physical Activity, an ongoing, nation-wide cross-sectional survey. Food intake was assessed by means of a 7-days food diary in a sample of the adult Danish population (n=3354), recruited 2003-2008. Foods and drinks were combined into 53 overall food groups, and Principal Component Analysis (PCA) was applied to identify underlying dietary patterns. Multiple regression analysis was applied to determine associations between dietary patterns and gender, age and health-related lifestyle factors (smoking, physical activity and BMI).

Results

Three major dietary patterns were detected: A ‘Traditional’ pattern characterized by high correlation with rye bread, topping on bread, meat, potatoes and gravy; a ‘Health Conscious’ pattern, highly correlated with fruit and vegetables, nuts, coarse bread, water and tea, and a ‘Fast food’ pattern, correlated with pizza, hamburger, soft drinks, sweets and crisps.

The traditional pattern was positively associated with being male and physically active, while the health conscious pattern was associated with age, and being female, non-smoker, physically active, and negatively associated with body mass index. The fast food pattern was negatively associated with age and smoking.

Figure. Loading plot

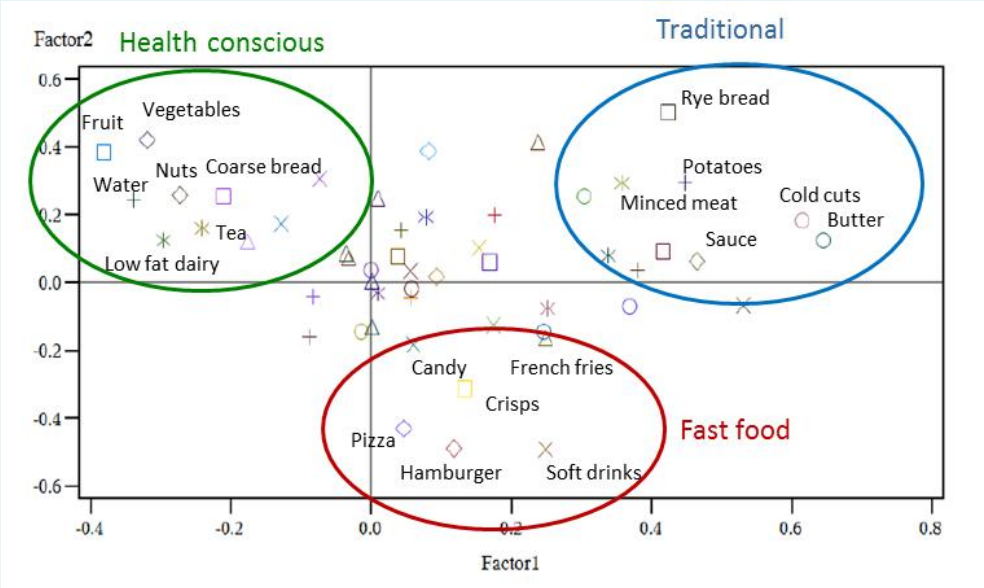


Table. Coefficients linking dietary patterns and lifestyle factors

	Traditional		Health conscious		Fast food	
	β	p value	β	p value	B	p value
Gender						
Male	Ref		Ref		Ref	
Female	-0.44	<0.0001	0.31	<.0001	0.02	0.2060
Age						
18-24	Ref					
25-44	0.36	<.0001	0.45	<.0001	-0.59	<.0001
45-64	0.27	<.0001	0.56	<.0001	-1.6	<.0001
65-75	0.25	<0.01	0.52	<.0001	-1.83	<.0001
BMI	-0.01	<0.05	-0.02	<.0001	0.004	0.3043
Smoking						
Never	Ref		Ref			
Daily/occasional	-0.01	0.4200	-0.31	<.0001	-0.08	<.0001
Physical activity						
Sedentary/light	Ref					
Moderate/vigorous	0.04	0.0216	0.10	<.0001	-0.02	0.2820

Conclusions

Three dietary patterns were identified, and associations with health-related lifestyle factors were assessed. Identification of dietary patterns is useful in future nutritional campaigns to increase the proportion in the population complying with dietary guidelines.

Keywords

Dietary patterns, PCA, lifestyle factors